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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,381	08/27/2001	Hossein Alavi	3927P004	4377

8791 7590 03/04/2004

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EXAMINER

PHU, PHUONG M

ART UNIT	PAPER NUMBER
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2631

DATE MAILED: 03/04/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/940,381

Applicant(s)

ALAVI ET AL.

Examiner

Phuong Phu

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-20 is/are allowed.
- 6) ☒ Claim(s) 1-5, 8, 11, 14 and 21 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 9, 10, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 8, 11, 14 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Hendrickson et al (6,055,281).

As per claims 1, 11 and 21, see figures 2, 4A, 4B and 5, and col. 10, line 33 to col. 12, line 35 and col. 16, line 33 to col. 17, line 64, Hendrickson et al discloses a method (212, 214) (see figure 2) comprising:

step (212) (see figure 4A) for computing a complex phase difference between a current symbol and a previous symbol as a reference symbol;

step (404,406) (see figure 4B) for separating a real (R) component (222I) and an imaginary (I) component (222Q) forming the complex phase difference;

step (214) (see figures 2 and 5) for determining at least one boundary constraint line (Re, Im, Re=Im, Re=-Im) of a complex phase map for a selected demodulation scheme; and

step (214) for computing a combination of the real component and imaginary component to detect whether a series of bits falls within a selected region of the complex phase map defined by the at least one boundary constraint line (see col. 17, lines 17-64 and TABLE 2).

As per claim 2, in Hendrickson et al, it is inherent that the previous symbol determines the complex phase difference prior to the current symbol because the previous symbol is occurred prior to the current symbol (see figure 4A).

As per claim 3, Hendrickson et al discloses that the previous symbol is received by means (405) prior the current symbol (see figure 4A).

As per claim 4, Hendrickson et al discloses that the at least one boundary constraint line associated with a demodulation scheme includes lines ( $\text{Re}=-\text{Im}$ , namely  $\text{Re}+\text{Im}=0$ ) and ( $\text{Re}=\text{Im}$ , namely  $\text{Re}-\text{Im}=0$ ) (see figure 5).

As per claim 5, Hendrickson et al discloses that the at least one boundary constraint line associated with a demodulation scheme includes line ( $\text{Re}$ , namely  $\text{Im}=0$ ) (see figure 5).

As per claims 8 and 14, Hendrickson et al discloses that the detection of the series of bits includes detecting a sign bit of the real component of the complex phase difference (see Sign ( $\text{Re}$ ) of TABLE 2).

#### ***Allowable Subject Matter***

3. Claims 15-20 are allowed.
4. Claims 6, 7, 9, 10, 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


#### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 703-308-0158. The examiner can normally be reached on M-F (8:30-6:00) First Monday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 703-306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Phuong Phu  
2/5/04

Phuong Phu  
Primary Examiner  
Art Unit 2631

**PHOUNG PHU**  
**PRIMARY EXAMINER**